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# Matematik ders kitaplarında matematik tarihinin işlenmesi üzerine: Türkiye ve Yunanistan'ın karşılaştırmalı incelenmesi

# The treatment of history of mathematics in mathematics textbooks: A comparative study of Türkiye and Greece

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**Özet**:

Bu araştırmanın temel amacı, Yunanistan ve Türkiye'deki 6. sınıf matematik ders kitaplarında matematik tarihine yer verilmesinin karşılaştırmalı olarak analiz edilmesidir. Bu amaçla araştırma nitel araştırma yöntemi esas alınarak yürütülmüş ve doküman analizinden yararlanılmıştır. Araştırmanın veri kaynakları 2020-2021 eğitim-öğretim yılında Yunanistan ve Türkiye'deki devlet okullarında ders materyali olarak kullanılan 6. sınıf matematik ders kitaplarıdır. Araştırmanın verileri içerik analizi yöntemiyle analiz edilmiştir. Araştırmanın bulgularına göre, Yunanistan 6. sınıf matematik ders kitabındaki matematik tarihini içeren madde sayısı, Türkçe 6. sınıf matematik ders kitabından niceliksel olarak daha fazladır. Ayrıca Yunanistan 6. sınıf matematik ders kitabında "Geometrik" öğrenme alanında matematik tarihine odaklanırken, Türkçe 6. sınıf matematik ders kitabında "Sayılar ve İşlemler" konusuna odaklanmaktadır. Ancak her iki ülkede de matematik tarihi içeriklerinin benzer olduğu ve ders kitaplarında farklı bölümlerde matematik tarihine yer verildiği görülmüştür.

**Anahtar Kelimeler:** Matematik, Matematik Tarihi, Matematik Ders Kitapları

**Abstract:**

The main purpose of this research is to comparatively analyze the inclusion of history of mathematics in 6th grade mathematics textbooks in Greece and Türkiye. For this purpose, the research was conducted on the basis of qualitative research method and document analysis was used. The data sources for the research are 6th grade mathematics textbooks taught in public schools in Greece and Türkiye in the 2020-2021 academic years. The data of the research were analyzed by the content analysis method. According to the findings of the research, the number of items that include the history of mathematics in the Greek 6th grade mathematics textbook is quantitatively higher than the Turkish 6th grade mathematics textbook. In addition, while Greece focuses on the history of mathematics in the "Geometric" learning area in the 6th grade mathematics textbook, Turkish focuses on "Numbers and Operations" in the 6th grade mathematics textbook. However, it has been observed that the contents of the history of mathematics in both countries are similar, and the history of mathematics is included in different sections of the textbooks.

**Keywords:** Maths, Mathematics History, Maths Textbooks

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## 1. Introduction

Mathematical history dates back to the beginning of human existence. It is generally considered important that mathematics progresses in parallel with science and technology. However, civilizations' experiences in social life also contributed to the development of mathematics under their influence. A general definition of the history of mathematics is the transfer of mathematical knowledge from one

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civilization to another according to the needs of each civilization. Teaching mathematics involves both using the history of mathematics as a tool and as a goal. In mathematics teaching, using the history of mathematics aims to revive the following information in the students' minds. Firstly, they perceive that mathematics has developed with different cultures and civilizations from past to present and realize that mathematics is a dynamic consciousness (Fauvel & vann Maanen, 2006).

Using the history of mathematics in teaching mathematics provides students with many advantages. It is possible to list them as follows: (Fauvel 1991, pp.3-8 )

Thanks to the history of mathematics, students realize that mathematics is a science that develops over time.

- It helps motivate students in mathematics teaching.
- They learn about the historical process and students gain knowledge about how concepts are developed.
- It gives a different perspective to mathematical perceptions.
- Students have the opportunity to compare ancient and modern forms of mathematics. They perceive the value of modern techniques.
- Create a multicultural approach.
- It provides opportunities for research.

Most mathematics textbooks include a chapter or chapters on the history of mathematics. These chapters include the history of mathematical discoveries and the lives and works of important mathematicians. Students gain a deeper understanding of how mathematical concepts develop, were discovered, and evolved through studying the history of mathematics. History of mathematics chapters are generally arranged in chronological order. The starting point is the ancient mathematicians and important mathematical discoveries, followed by the work of mathematicians in the Middle Ages and the Renaissance. Then, the Enlightenment period and subsequent mathematical developments, and the advances made in the 19th and 20th centuries, where the foundations of modern mathematics were laid, are examined (Fried, 2013).

In these chapters, the biographies and contributions of important mathematicians in the history of mathematics are discussed in detail. Students will explore, for example, the works of Ancient Greek mathematicians Thales, Pythagoras and Euclid, the works of Medieval mathematicians Al-Khwarizmi and Fibonacci, the mathematical interests of Renaissance mathematician Leonardo da Vinci, and modern mathematicians such as Isaac Newton, Carl Friedrich Gauss, Leonhard They learn about the contributions of Euler, Albert Einstein, and others (Fauvel & Vann Maneen, 2006). Textbooks that include the history of mathematics provide students with an understanding of the development of mathematical thinking and how mathematical problems are solved. Additionally, examples from the history of mathematics help students better understand mathematical concepts and relate them to real-world applications. There are

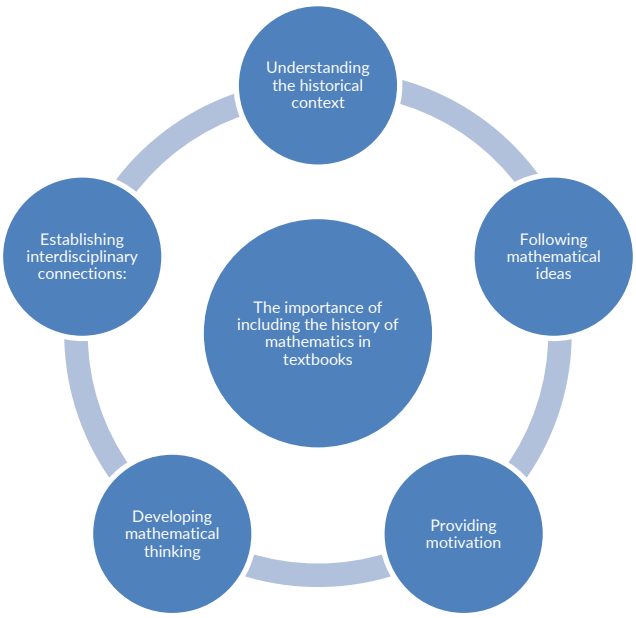



**Figure 1**. The Importance of Including the History of Mathematics in Textbooks

several important reasons why the history of mathematics is included in textbooks: (Boyer & Merzbach, 2011)

- Understanding the historical context: Covering the history of mathematics provides an important perspective for understanding how mathematical concepts develop and evolve. By understanding the historical context of mathematical thought, students can see how mathematics has grown, changed, and shaped itself into its current form.
- Following mathematical ideas: Learning the history of mathematics gives students the opportunity to follow how mathematical ideas emerged and developed. By studying the discoveries and inventions of important mathematicians, they can see how mathematical thought progressed and how mathematical problems were solved.
- Providing motivation: Including the history of mathematics can increase students' motivation regarding mathematics. By telling the stories of important mathematicians in the history of mathematics, students can be shown how mathematics is used in the real world and how problems are solved. In this way, it can increase students' interest and motivation by making mathematical topics more meaningful.

Developing mathematical thinking: History of mathematics can help students develop critical thinking skills. Understanding the historical background of mathematical discoveries can teach students to consider mathematical problems from different perspectives and discover solutions. Additionally, challenges and successes in the history of mathematics can inspire students to overcome obstacles encountered in solving

## 2. Method

The research was conducted on the basis of qualitative research and document analysis was used. Document analysis; It is done according to the stages of accessing documents, checking their originality, understanding the documents, analyzing the data, and using the data (Yıldırım & Şimşek, 2013). Apart from the above analyses, document analysis includes review (superficial review), reading (detailed review) and interpretation. This iterative process combines elements of content analysis and requires thematic analysis. Thematic analysis is a form of pattern recognition in data, and the emerging themes become categories for analysis. Content analysis is used here. This includes the processes of converting information related to the basic questions of the research into text (transcription) and organizing it into categories (Corbin & Strauss, 2008).

Document analysis steps in this study were as follows: The documents to be analyzed were accessed through textbooks. The originality of the document was then checked. It was then read in detail. Then, content analysis was performed and codes and categories were created. The latest data was digitized, interpreted and reported.

### Data Sources

Data sources of the research are the Türkiye 6th Grade secondary school mathematics textbook published by the Ministry of National Education for the 2022-2023 academic year and the Greek 6th Grade mathematics textbooks published by the Greek Ministry of Religion and Education. The data sources of the research were accessed from the sites available in the form of e-books on the official website of the Ministry of National Education of the relevant countries. While Turkish 6th grade mathematics textbook was accessed via EBA (Education Information Network), Greek 6th grade mathematics textbook was accessed from http://ebooks.edu.gr/ebooks/.

### Data Analysis

While analyzing the data in the research, content analysis data analysis method was used. In content analysis, qualitative research data obtained through interviews, observations or documents are analyzed in four stages:

Coding the data, finding themes, arranging the codes and themes, defining and interpreting the findings (Yıldırım & Şimşek, 2013). First of all, similar themes were determined by the researchers after analyzing the data. Then, the identified themes were presented as subcategories and codes. For example, the inclusion of the history of maths in the 6th grade textbooks of both countries was examined and the detailed content was reached by structurally dividing it into subcategories as "introduction to the subject, activity section and evaluation section".

The reliability of the study was calculated using the encoder reliability formula of Miles and Huberman (1994). The researchers received help from the faculty member of Istanbul Aydin University's mathematics teaching department regarding reliability. The agreement percentage of researchers and field experts was 0.92. The fact that the agreement percentage is over 80 percent shows that the research is reliable (Miles & Huberman, 1994).

## 3. Findings

**Examining the inclusion of History of Mathematics in Secondary School 6th Grade Mathematics Textbooks in Turkish and Greek.**

As a result of the analysis of the data obtained, the analysis of the inclusion of history of mathematics in the 6th grade secondary school mathematics textbooks taught in Türkiye and Greek, according to the order of presentation, is shown in Figure 2.

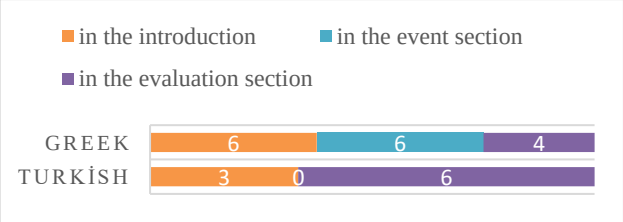



**Figure 2.** Including History of Mathematics 6th Grade Textbooks

As seen in Figure 2, the inclusion of history of mathematics in Turkish 6th grade mathematics textbook is at the introductory stage of the subject (f = 3); In the Greek 6th grade mathematics textbook, it is (f = 6). In the activity section, while the history of mathematics is not included in the Türkiye 6th grade mathematics textbook; It is (f=6) in the Greek 6th grade mathematics textbook. During the evaluation process, an item on the history of mathematics in Turkish 6th grade mathematics textbook (f = 6); The case of including the history of mathematics in the evaluation process of the Greek 6th grade mathematics textbook is (f = 4).

When the findings of both countries are compared in the 6th grade mathematics textbooks, while Turkish 6th grade secondary school mathematics textbook focuses on the evaluation of the history of mathematics, the Greek 6th grade secondary school mathematics textbook mostly focuses on the introduction and activities section.

Figure 3 shows information regarding the analysis of the inclusion of history of mathematics in 6th grade mathematics textbooks in Türkiye and Greek according to learning areas/themes.

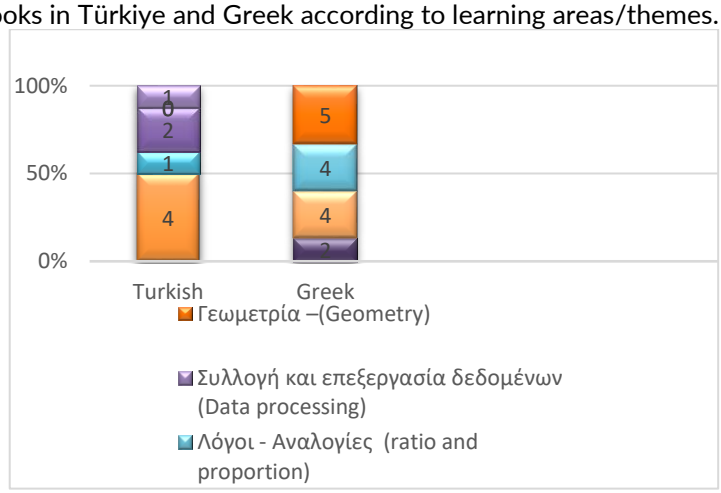



**Figure 3**. Learning Areas and Themes That Include the History of Mathematics in 6th Grade Textbook.

As seen in Figure3, the history of mathematics is included in the field of learning numbers and operations in Turkish's 6th grade mathematics textbook (f = 4); The situation in which the history of mathematics is included in the learning area Αριθμοί και πράξεις (Numbers and Operations) in the Greek 6th grade mathematics textbook is (f = 2). While the history of mathematics is included in the

Algebra learning area in Turkish's 6th grade mathematics textbook (f = 1), in Greek's 6th grade mathematics textbook, it is (f = 4) in the themes of Εξισώσεις (Equations) and Λόγοι - Αναλογίες Ratio-Proportion. While the history of mathematics is included in the field of learning geometry and measurement in the 6th grade mathematics textbook in Turkish (f = 2), it is (f = 5) in the field of learning Γεωμετρία – (Geometry) in the 6th grade mathematics textbook in Greek. While Turkish's 6th grade mathematics textbook does not contain information on the history of mathematics in the field of data processing; In the Greek 6th grade mathematics textbook, data processing is (f = 1) in the learning area. It has been determined that the history of mathematics is not included in the themes of probability and Greek Μετρήσεις - Μοτίβα (Measurements – Models) in the 6th grade mathematics textbook in Turkish.

When we look at the overall findings, it is seen that the history of mathematics is included in the learning areas in the Greek 6th grade mathematics textbooks (f = 16) is more than the Turkish 6th grade mathematics textbooks include the history of mathematics (f = 7). In addition, while in the Greek 6th grade mathematics textbook, the most mention is in the field of learning Geometry (f = 5), in Turkish, the history of mathematics is mostly included in the field of learning numbers and operations.

Figure 4 shows the findings regarding the content of the history of mathematics in the 6th grade mathematics textbooks of Turkish and Greek.

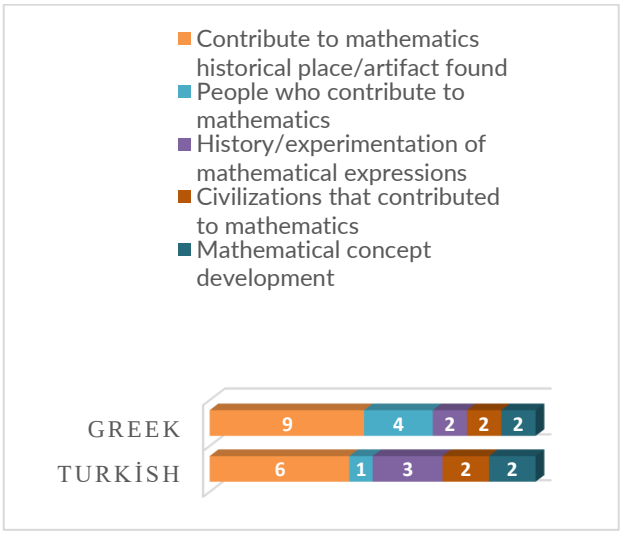



**Figure 4.** History of Mathematics Contents In 6th Grade Mathematics Textbooks

As seen in Figure 4, historical places that contribute to mathematics in the history of mathematics are included most frequently in the 6th grade mathematics textbooks of Turkish and Greek (Turkish f=6; Greek, f=9). While it is seen that the items that include the history of mathematics in the 6th grade mathematics textbooks in Turkish are the ones that contribute the least to mathematics (f=1), in the 6th grade mathematics textbooks in Greek, the number of people who contribute to mathematics is (f=4). The civilizations that contributed to mathematics and the content of mathematical concept development in the 6th grade mathematics textbooks of both countries are the same (f = 2). While the historical content of mathematical expressions in the 6th grade mathematics textbook in Turkish is (f = 3), this frequency is (f = 2) in the Greek 6th grade textbook.

Based on the overall findings, the content of the items that include the history of mathematics in the mathematics textbooks of both countries is concentrated on the content of historical places that contribute to mathematics.

The difference is that the contents in the Turkish 6th grade mathematics textbook (f = 14) are less frequent than the contents in the Greek 6th grade mathematics textbook (f = 16).

Figure 5-6-7-8-9-10 shows examples of the history of mathematics in Turkish and Greek 6th grade mathematics textbooks.

Fibonacci dizisi

Doğanın kanunlarını matematiksel bir şekilde açıklamaya çalışan, matematiğin sınırlarını Avrupa'ya tanıtan, en meşhur dizilerden bir tanesine adını veren ünlü matematikçi Fibonacci'dir. Kendi adını verdiği Fibonacci dizisinin ilk iki terimi 1 ve 1'den oluşmaktadır.

1-1-2-3-5-8-13-21-34-...

Fibonacci dizisinin her yerde olduğunu biliyor muydunuz?

Dizinin kuralı şöyledir: Önceki iki terimi toplayarak yeni terim oluşturun ve bu şekilde sayıların hızlıca arttığını göreceksiniz.

Ayçiçeğinin merkezinden dışarıya doğru sağdan sola ve soldan sağa doğru taneler sayıldığında çıkan sayılar Fibonacci dizisinin ardışık terimleridir.

Çam kozalağındaki taneler kozalağın altındaki sabit bir noktadan kozalağın tepesindeki başka bir sabit noktaya doğru spiraller (eğriler) oluşturarak çıkarlar. İşte bu taneler soldan sağa ve sağdan sola sayıldığında çıkan sayılar, Fibonacci dizisinin ardışık terimleridir.

**Figure 5.** A Sample Activity in Turkish Maths-Textbook

As seen in Figure 5, information is given about the famous mathematician Fibonacci and the sequence he created.It can be stated that this activity can be included in the historical content of mathematical expressions, as the activity in question explains both the formation of the sequence and the examples supported by life.

Eratosthenes ve Dünya'nın Çevresi

Üzerinde yaşadığımız Dünya'nın çevre uzunluğunu bundan yaklaşık 2200 yıl önce ünlü Yunan Matematikçi Eratosthenes; açı, üçgen ve çember bilgilerini kullanarak tahmin etmiştir. Peki, bunu nasıl yapmıştır?

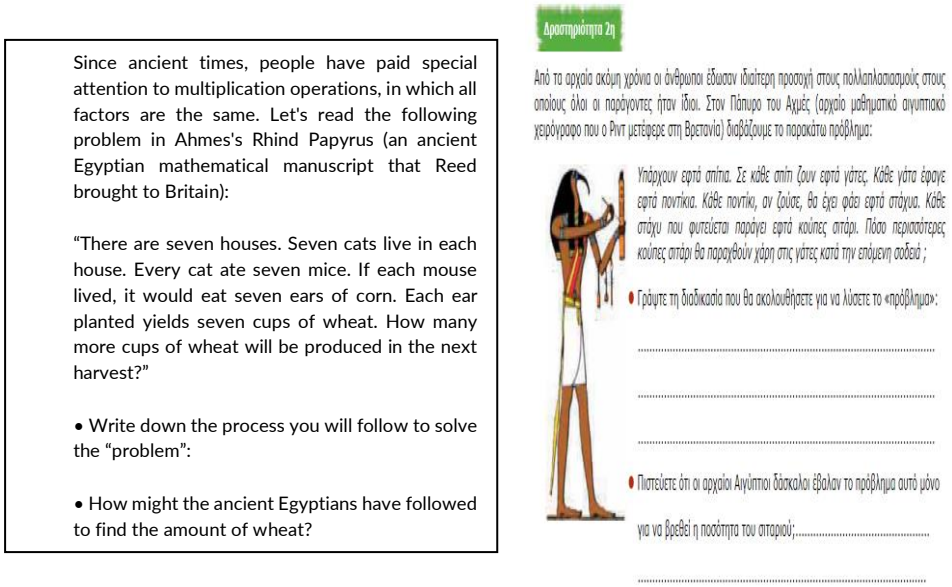
Mısır'ın kuzeyindeki İskenderiye şehrinde yaşayan Eratosthenes, yaz ortasındaki günlerin tam öğle vaktinde güneş saatiyle inceleme yaparken saat üzerinde yaklaşık 7°lik bir gölge olduğunu fark etti. Fakat aynı zamanlarda güneydeki Syene şehrine güneş dik olarak düşmekteydi ve güneş saati üzerinde hiç gölge bırakmamaktaydı. O zamanlar uzaklık ölçü birimi olarak stadya (yaklaşık 0,15 km) kullanılmaktaydı. İskenderiye şehri, Syene şehrine yaklaşık 5040 stadya uzaklıktaydı. Buradan yola çıkarak Dünya'yı bir daire olarak düşünen Eratosthenes, İskenderiye ile Syene arasındaki mesafenin Dünya'nın merkez noktasında da 7°lik bir açı oluşturması gerektiğini düşündü. Dairenin toplam açısı 360° olduğuna göre 7°lik bir açı yaklaşık 50'de 1'lik bir parça anlamına geliyordu.

Bu nedenle iki şehir arasındaki mesafe, Dünya'nın toplam çevresinin $\frac{1}{5}$'i olmalıydı ve bu da $5040 \cdot 50 = 252\,000$ stadya etmekteydi. 252 000 stadya ise yaklaşık 37 800 km' ye denk gelmektedir.

Günümüzde Dünya'nın çevre uzunluğunun 40 075 km olduğu söylenmektedir. Bu değer ise yaklaşık 2200 yıl önce Eratosthenes'in bulduğu değere oldukça yakındır.

**Figure 6**. A Sample in Turkish Math- Textbook.

Figure 6 shows information about the method the Greek mathematician followed when calculating the circumference of the world and what data he used. The item related to the history of mathematics in question is included in the mathematical expressions/experiment category because it explains the process of calculating the circumference of the world with mathematical operations.



Since ancient times, people have paid special attention to multiplication operations, in which all factors are the same. Let's read the following problem in Ahmes's Rhind Papyrus (an ancient Egyptian mathematical manuscript that Reed brought to Britain):

"There are seven houses. Seven cats live in each house. Every cat ate seven mice. If each mouse lived, it would eat seven ears of corn. Each ear planted yields seven cups of wheat. How many more cups of wheat will be produced in the next harvest?"

• Write down the process you will follow to solve the "problem":

• How might the ancient Egyptians have followed to find the amount of wheat?

Δραστηριότητα 2η

Από τα αρχαία ακόμη χρόνια οι άνθρωποι έδωσαν ιδιαίτερη προσοχή στους πολλαπλασιασμούς στους οποίους όλοι οι παράγοντες ήταν ίδιοι. Στον Πάπυρο του Αχμές (αρχαίο μαθηματικό αιγυπτιακό χειρόγραφο που ο Ρίντ μετέφερε στη Βρετανία) διαβάζουμε το παρακάτω πρόβλημα:

Υπάρχουν εφτά σπίτια. Σε κάθε σπίτι ζουν εφτά γάτες. Κάθε γάτα έφαγε εφτά ποντίκια. Κάθε ποντίκι, αν ζούσε, θα έτρωγε εφτά στάχυα. Κάθε στάχυ που φυτεύεται παράγει εφτά κούπες σιτάρι. Πόσο περισσότερες κούπες σιτάρι θα παραχθούν χάρη στις γάτες κατά την επόμενη σοδειά ;

• Γράψτε τη διαδικασία που θα ακολουθήσετε για να λύσετε το «πρόβλημα»:

.....

.....

.....

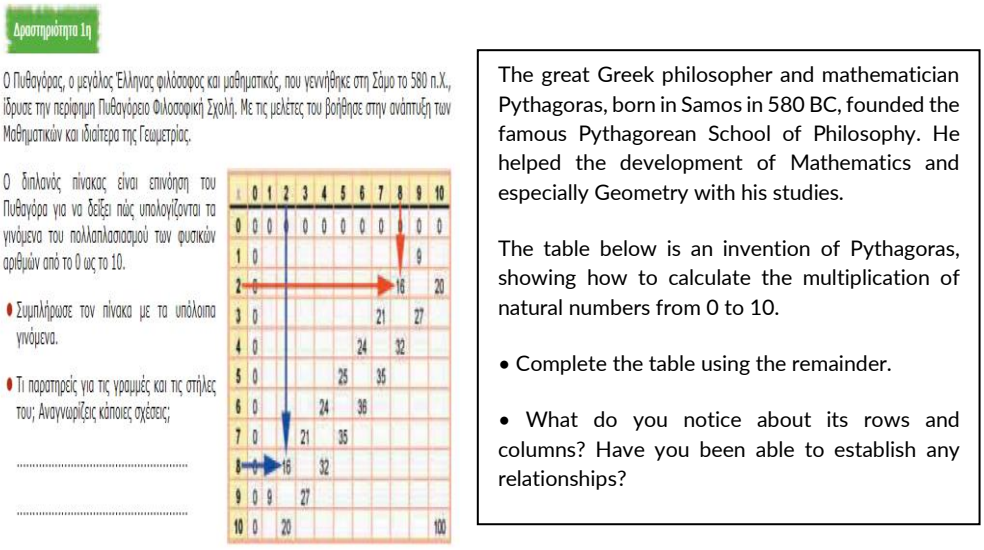
• Πιστεύετε ότι οι αρχαίοι Αιγύπτιοι δάσκαλοι έβαλαν το πρόβλημα αυτό μόνο για να βρεθεί η ποσότητα του σιταριού;.....

.....

**Figure 7.** A Sample Activity About Civilizations Contributing to Mathematics in Greek 6th Grade Mathematics Textbook.

First, it was stated that people in Ancient Egypt used a special formula for multiplication. Then the problem written in the Ahmes Rhind Papyrus was asked.

The activity in question is to show examples of the first mathematical written products in Ancient Egypt and to write in parentheses (αρχαίο μαθηματικό αιγυπτιακό χειρόγραφο που ο Ριντ μετέφερ) in the question. ε στη Βρετανία) (an ancient Egyptian mathematical manuscript that Reed brought to Britain) This activity can be within the scope of civilizations/works that contribute to mathematics.



Δραστηριότητα 1η

Ο Πυθαγόρας, ο μεγάλος Έλληνας φιλόσοφος και μαθηματικός, που γεννήθηκε στη Σάμο το 580 π.Χ., ίδρυσε την περίφημη Πυθαγόρειο Φιλοσοφική Σχολή. Με τις μελέτες του βοήθησε στην ανάπτυξη των Μαθηματικών και ιδιαίτερα της Γεωμετρίας.

Ο διπλανός πίνακας είναι επινόηση του Πυθαγόρα για να δείξει πώς υπολογίζονται τα γινόμενα του πολλαπλασιασμού των φυσικών αριθμών από το 0 ως το 10.

• Συμπλήρωσε τον πίνακα με τα υπόλοιπα γινόμενα.

• Τι παρατηρείς για τις γραμμές και τις στήλες του; Αναγνωρίζεις κάποιες σχέσεις;

.....

.....

| × | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | | | | | | | | | 9 | |
| 2 | 0 | | | | | | | | 16 | | 20 |
| 3 | 0 | | | | | | | 21 | | 27 | |
| 4 | 0 | | | | | | 24 | | 32 | | |
| 5 | 0 | | | | | 25 | | 35 | | | |
| 6 | 0 | | | | 24 | | 36 | | | | |
| 7 | 0 | | | 21 | | 35 | | | | | |
| 8 | 0 | | 16 | | 32 | | | | | | |
| 9 | 0 | 9 | | 27 | | | | | | | |
| 10 | 0 | | 20 | | | | | | | | 100 |

The great Greek philosopher and mathematician Pythagoras, born in Samos in 580 BC, founded the famous Pythagorean School of Philosophy. He helped the development of Mathematics and especially Geometry with his studies.

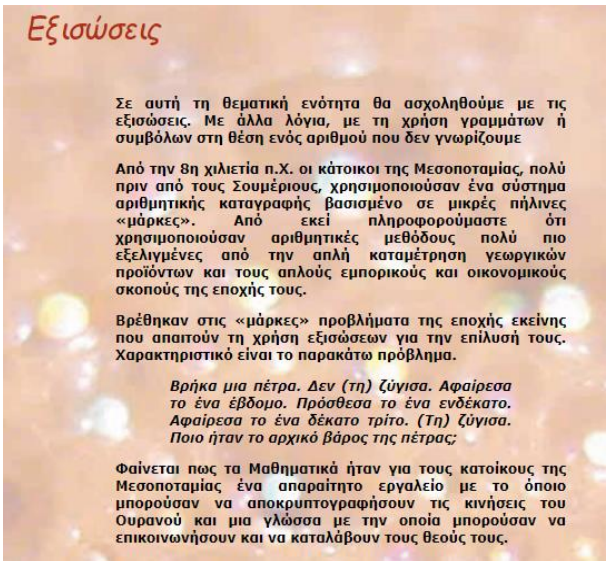
The table below is an invention of Pythagoras, showing how to calculate the multiplication of natural numbers from 0 to 10.

• Complete the table using the remainder.

• What do you notice about its rows and columns? Have you been able to establish any relationships?

**Figure 8.** A sample activity in Greek 6th grade mathematic textbook.

There is more than one content in the activity related to the history of mathematics shown in Figure 8. Firstly, the birth year and place of the famous mathematician and his educational activities are mentioned. In this respect, it can be said that the activity includes the category of people who contribute to mathematics. However, questions have been asked about the operation of the Pythagorean multiplication table invented by Pythagoras. In this respect, it can be said that mathematical expressions have historical content.




In this thematic unit we will cover equations. In other words, using a letter or symbol instead of a number we do not know. Long before the Sumerians, from the 8th millennium BCE, Mesopotamian people used a numerical recording system based on small clay "tokens." From here we learn that they used much more complex numerical methods than the simple counting of agricultural products and simple commercial and economic purposes of their time.

The "brand" problems of that time included problems that required the use of equations to solve them. The following problem is typical. I found a stone. I didn't weigh (him). I took out one seventh. I added the eleventh. I removed one thirteenth of it. I weighed (him). What was the original weight of the stone? It seems that Mathematics was an important tool for the inhabitants of Mesopotamia with which they could decipher the movements of the heavens and a language with which they could communicate and understand the gods.

**Figure 9.** A sample in Greek Textbook.

In Figure 9, in the introduction to the subject of equations, the numerical recording system that the Mesopotamian people used from small clays before the Sumerians was mentioned. It has been mentioned that they use equations to count agricultural products and to solve complex systems in the commercial and economic system. And an example event from historical records is presented. This example is an activity belonging to the type of civilizations that contribute to the history of mathematics in the introduction part of the subject.

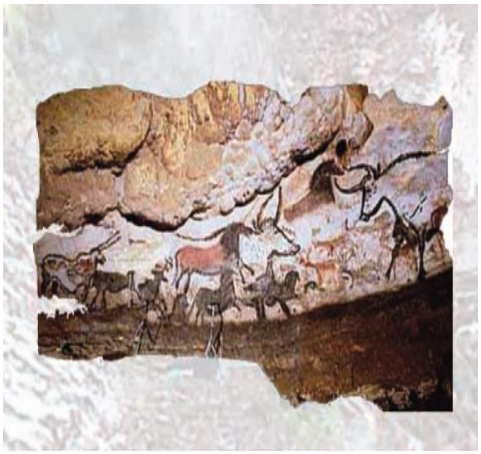
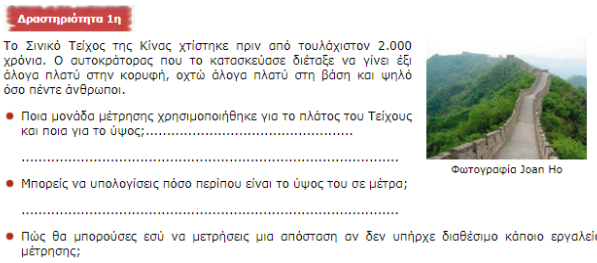


**Figure10.** An example in Greek textbook.

As seen in Figure 10, in the introduction to the subject of symmetry and proportion, the subject of symmetry and proportion was mentioned by mentioning primitive cave paintings. Primitive cave paintings testify to the existence of these ideas. These paintings depict images of animals, predators, geometric shapes, etc. to interpret the environment. Designed by skilled craftsmen who craft paintings. The pictures are not random, but realistic and proportional in size.

Below the picture there are statements such as: Today, as then, the study of the environment has encouraged people to systematize their thoughts and transform them into knowledge. This knowledge is a tool that humans use to interpret their environment, but it is also the basis that allows them to influence it.

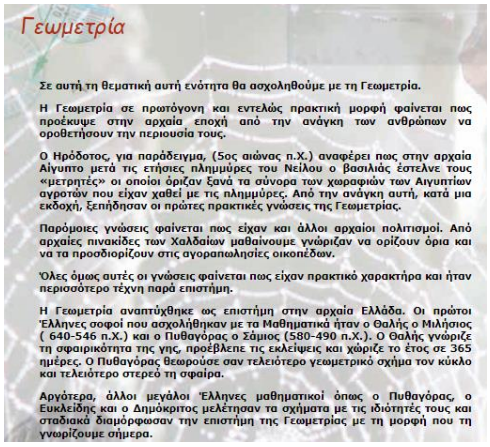



The Great Wall of China was built at least 2000 years ago. The emperor who had it built ordered that its top be six horses wide, its base eight horses wide and five people high.

**Figure 11.** A sample in Greek textbook.

In Figure 11, the history of mathematics is mentioned in an activity. The Great Wall of China was built at least 2000 years ago. The emperor who had it built ordered that its top be six horses wide, its base eight horses wide and five people high.

- Which unit of measurement was used for the width of the wall and which unit of measurement was used for its height?
- Can you calculate approximately how tall he is in metres?
- What problems does such a measurement create?
- "The battle with the Persians took place at Mykali, where the pass was seven stadiums wide." What information does this expression give us about the measurement of distances in Ancient Greek?




Geometry in a primitive and purely practical form seems to have arisen in ancient times from the need to determine people's property. For example, Herodotus (5th century BC) mentions that in ancient Egypt, after the annual floods of the Nile River, the king sent "meters" who redefined the boundaries of Egyptian farmers' fields lost in the floods. According to one version, from this need arose the first practical knowledge of Geometry. Ther ancient civilizations appear to have had similar

**Figure 12.** A sample in Geek textbook.

In Figure 12, famous people in the history of geometry are mentioned in the introduction part of the topic. Geometry in a primitive and purely practical form seems to have arisen in ancient times from the need to determine people's property. For example, Herodotus (5th century B.C.) mentions that in ancient Egypt, after the annual floods of the Nile River, the king sent "mistresses" who redefined the boundaries of Egyptian farmers' fields lost in the floods. According to one version, from this need arose the first practical knowledge of Geometry. Other ancient civilizations appear to have had similar knowledge. From ancient Chaldean tablets we learn that they knew how to define boundaries and set them for the buying and selling of lands. However, all this information seems to be of a practical nature and is more of an art than a science. Geometry was developed as a science in ancient Greek. The first Greek sages to deal with mathematics were Thales of Miletus (640-546 BC) and Pythagoras of Samos (580-490 BC). Thales knew the roundness of the earth, predicted eclipses, and divided the year into 365 days. Pythagoras saw the circle as the most perfect geometric shape and the sphere as the most perfect object. Later, other great Greek mathematicians such as Pythagoras, Euclid and Democritus studied shapes together with their properties, gradually shaping the science of Geometry into the form we know today.

## 4. Discussion and Conclusion

In this research, the inclusion of history of mathematics in the 6th grade mathematics textbook in Greek and Turkish was comparatively analyzed. Among the findings of the research, the results regarding the first theme indicate that the number of items containing the history of mathematics in the Greek 6th Grade textbook is higher than in the Turkish 6th Grade mathematics textbook. In addition, in the Greek mathematics textbook, the history of mathematics is mostly included in the introduction part of the units, while in the Turkish mathematics textbook, content related to the history of mathematics is mostly included in the evaluation sections where the topics end.

While this finding of the research differs from the findings in the studies conducted by Erdoğan Eşmen and Fındık (2015), Mersin and Durmuş (2018) and Ceylan (2021), most of the elements of the history of mathematics are given at the beginning of the subject, İncikabı, Kepceoğlu and Küçükoğlu (2018) with their study on effectiveness and This coincides with the finding that it is included at the end of the topics. The reason for this difference in research may be the use of more than one type of mathematics textbooks accepted by the Ministry of Education. In light of this result of the research, it can be stated that the inclusion of history of mathematics in the textbooks of both countries differs structurally and quantitatively. In their study, Xenofontos and Papadopoulos (2016) argued for the necessity of adding the history of mathematics to Greek textbooks in various elements and projects and presented many examples of plans for this purpose.

Another important finding of the research is the quantitative differences in the learning areas that include the history of mathematics in the mathematics textbooks of both countries. It has been determined that while the history of mathematics is mostly included in the field of geometry in the Greek mathematics textbook, the history of mathematics in the field of numbers is included more frequently in the Turkish mathematics textbook. This finding of the research supports the findings in the literature studies (Erdoğan Eşmen and Fındık, 2015; Mersin and Durmuş, 2018; Kepceoğlu, İnickabı and Küçükoğlu, 2018) that the most mathematics history items are given in the "Numbers and Operations" learning field.

The fact that both countries include the history of mathematics in different learning areas may be related to the contents. As a matter of fact, Erdoğan, Eşmen and Fındık (2015) and Şaşmaz and Aybek (2022), in their studies examining secondary school mathematics textbooks, stated that Turkish's mathematics textbooks include limited coverage of the history of mathematics and that they are included in the learning areas according to the initiative of the authors. Another important finding of the research is that the content of the items included in the history of mathematics in both countries mentions "historical places and works that contribute to mathematics". The reason for this similarity may be that the researchers who prepare the mathematics textbooks of the countries are inspired by the textbooks that include the history of mathematics in other countries. This finding pointed out that the history of mathematics should be used as a goal and tool in textbooks and that the contents were not distributed evenly.

Based on the main findings of the research, as stated by relevant literature studies on how to use the history of mathematics in mathematics teaching (Fried, 2013; Gulikers & Bloom; 2021; Jankvist, 2009; Panasuk & Horton, 2013), integrating the history of mathematics into mathematics teaching should include a specific process. Since, Tzanakis et al. (2002) working with original sources in mathematics lessons is the primary reason for motivating students. However, the process of integrating the history of mathematics into the course should be provided in a way that will shed light on the future, rather than presenting it as a classical history transfer or information presentation (Babb, 2005; Burns, 2010).

The limitation of the research consists of data obtained from Greek and Turkish 6th grade mathematics textbooks. Within the framework of the limitations of the research, the following suggestions can be made:

- History of mathematics can be used as a purpose and tool in contents that include history of mathematics in Greek and Turkish 6th grade mathematics textbooks.

- History of mathematics content can be included equally across learning areas in Greek and Turkish 6th grade mathematics textbooks

- In addition to using the activities in the Greek and Turkish 6th grade mathematics textbooks as an element that stimulates motivation and encouragement in the textbooks of the history of

mathematics, activities integrated with the history of mathematics can be included in learning the mathematics of life, since mathematics is a product of life.

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